

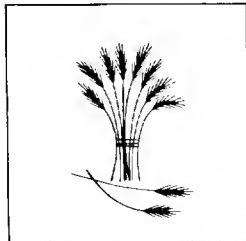
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*USSR: Early August Prospects for
Grain Production*

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Environment Analysis Brief

USSR: Early August Prospects for Grain Production

Summary

As of 9 August, Soviet grain prospects remain good. Production is estimated at 195 million metric tons, unchanged from our earlier estimate in July. Production of this amount would exceed last year's disastrous harvest by some 55 million tons and would be approximately equal to the 1974 harvest, the second largest in Soviet history.

By early August, the winter grain harvest, reportedly delayed ten to fourteen days in many areas due to wet weather, had moved northward into Belorussia, the Central Non-Black-Earth Zone and the Volga-Vyatka region. Although conditions are conducive for grain lodging, [redacted] only localized problems to date. Consequently, we have not changed our earlier winter grain estimate of 45 million metric tons.

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Excess moisture and delayed crop maturity in European Russia have not as yet reduced our spring grain estimate which remains at 150 million tons. Overall prospects for spring grain production remain favorable. However, if "wet harvest" conditions should continue, adverse effects on grain quality can be expected. By 1 August, 85 percent of the crop remained to be cut and threshed compared to a long-term average of 74 percent. The onset of winter earlier than usual could lead to major losses in late September and early October if the pace of the harvest does not pick up.

Note: This paper was produced by the Office of Geographic and Cartographic Research and coordinated with the Office of Economic Research. Comments and questions may be directed to [redacted] Code 143, Extension 3748. Date of information 9 August 1976.

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Status of Winter Grains

Our estimate of winter grain production remains unchanged at 45 million tons. This would be the smallest crop since 1972—a direct result of the unusually large amount of winterkill. The Soviet press has reported "good yields" in much of the Ukraine. In Poltava Oblast, winter wheat yields are reported to be 32-35 centners per hectare, a near record level.¹ Although wet weather conditions are conducive to grain lodging, evidence indicates minimal problems to date.

Status of Spring Grains

Spring grain production normally accounts for approximately two-thirds of the total Soviet grain production. They are grown primarily in areas of low soil moisture which greatly restricts their yield potential. As a result, spring grain yields, particularly in the New Lands of Kazakhstan and West Siberia—traditionally high-risk zones of agriculture—are greatly dependent upon rainfall in June and July.

Spring grain production is presently estimated at 150 million metric tons, 59 million tons more than last year's disastrous spring grain harvest, and second only to record 1973 spring grain harvest of 159 million tons. Nevertheless, two potentially yield-reducing events have occurred that may require a reduction in the estimate when further evidence becomes available.

1. The continued rains in European Russia during the critical flowering and filling stage of grain development have been excessive to the point of possibly reducing yields. Crop maturity has been delayed some 10-14 days.
2. The dry conditions which have prevailed in the North Caucasus and southernmost areas of the Ukrainian corn belt may reduce potential yields.

1976 vs. 1975

Moisture conditions and plant vigor levels which existed in July of this year are in sharp contrast to those which prevailed over much of the Soviet Union in July of 1975 (see Figures 1 and 2).

In 1975, critically low levels of soil moisture prevailed in all of Kazakhstan, the Urals, the Volga regions, the Caucasus, and most of the southern and eastern portions of the Ukraine. By the end of July, much of the grain crops in these areas had suffered irreversible damage, the result of severe stress during the crucial stages of plant development. Grain yields dropped dramatically. Spring grain production fell to 91 million metric tons, about 35 million tons less than the

¹ Characteristically, the Soviet press reports the best situations. Thus, the excellent conditions in Poltava cannot be taken as those prevailing over a larger area.

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1971-75 average. As a result, total Soviet grain production amounted to only 140 million tons, the lowest since 1965.

This year, in contrast to the situation of 1975, cool temperatures and above average precipitation—favorable for the growth and development of small grains—have existed over most of European Russia since early spring. Prospects for above-average yields appear likely. The only areas in European Russia which have suffered from serious moisture deficiencies have been in regions of the southern Ukraine contiguous with the Black Sea (Odessa, Nikolayev, Kherson Oblasts) and the Northern Caucasus (northern Stravropol Kray and eastern Rostov Oblast).

East of the Urals, in the main spring grain region, numerous and localized showers have produced an irregular pattern of crop development. Areas exhibiting potential for above-average yields are interspersed with areas which have suffered irreparable damage due to low soil moisture. Critically dry conditions this year have been primarily confined to the adjoining areas of northeastern Kazakhstan (Tselinograd and Pavlodar Oblasts) and southern West Siberia (Novosibirsk, Kemerov Oblasts) and Krasnoyarsk Kray.

Harvest Outlook

Cool, wet weather conditions in several regions within European USSR have delayed ripening and harvesting of this year's grain crop. By 1 August, 13 percent of the spring wheat crop, 85 percent of the winter wheat crop, and 40 percent of the spring barley crop had reached the combine ripe stage of maturity (see Figure 3). The winter grain harvest, reportedly delayed 10-14 days due to high moisture levels, had moved northward into Belorussia, the central Non-Black-Earth Zone and the Volga-Vyatka region.

Additional harvest delays are being caused by frequent rains in the Central Chernozem region, the lower and middle Volga, as well as in parts of the eastern Ukraine and Non-Chernozem Zone. The Volga Steppe has been the most seriously affected by downpours and strong winds which reportedly flattened some grain crops. However, since most of this year's lodging occurred after the grain had matured, the impact on net yields will be minimal.²

As of 2 August, the USSR Central Statistical Administration reported that grain and pulse crops (excluding corn) had been cut on an area of 27.4 million hectares, about one-fifth of the total sown acreage (see Table 1). Threshing has thus far been completed on about 67 percent of this area, although in the Ukraine some Oblasts have developed big gaps between the two activities. Poltava and

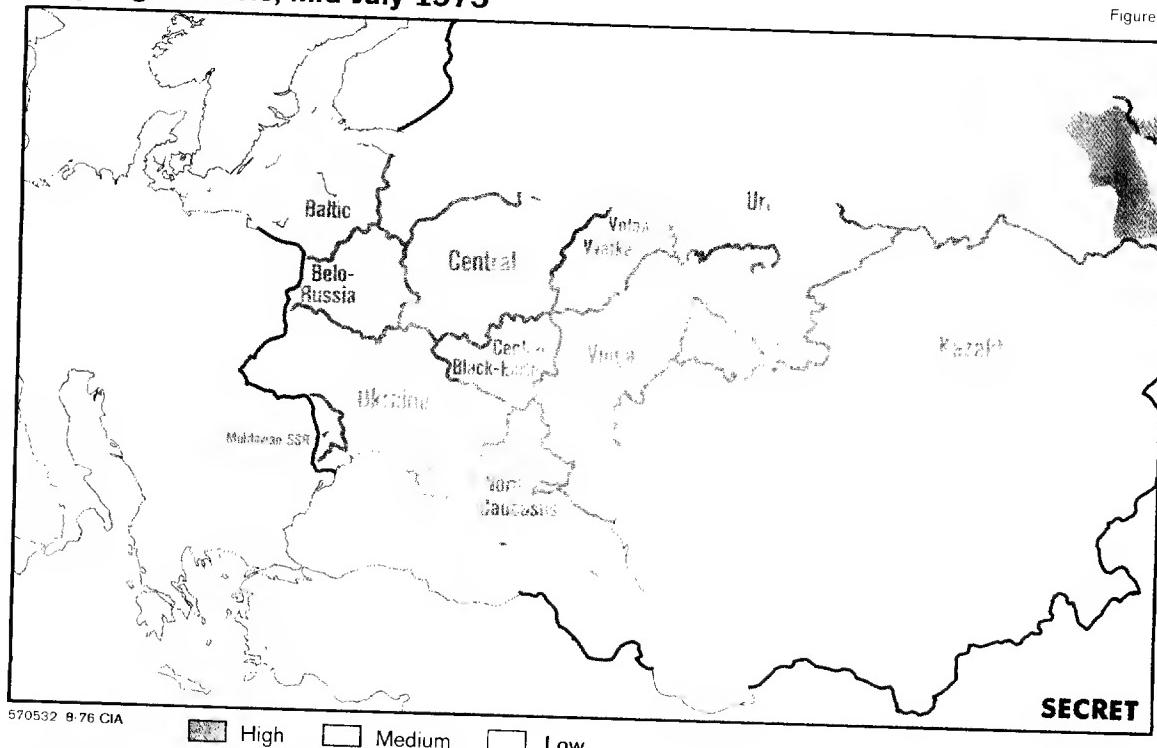
² Lodging describes a condition resulting when, because of rain and wind, grain stalks bend or break and form a flattened or tangled mass that is difficult to harvest. It generally occurs during the later stages of crop development—when the grains are tallest and weighted down with mature heads—and when plant growth has been especially lush. The extent of the losses associated with lodging depends partly on the stage of the plants' development when lodging occurs, the type of harvesting method employed, and weather conditions during harvesting. Production losses due to post-maturity lodging are minimized in the USSR by the use of hand harvesting.

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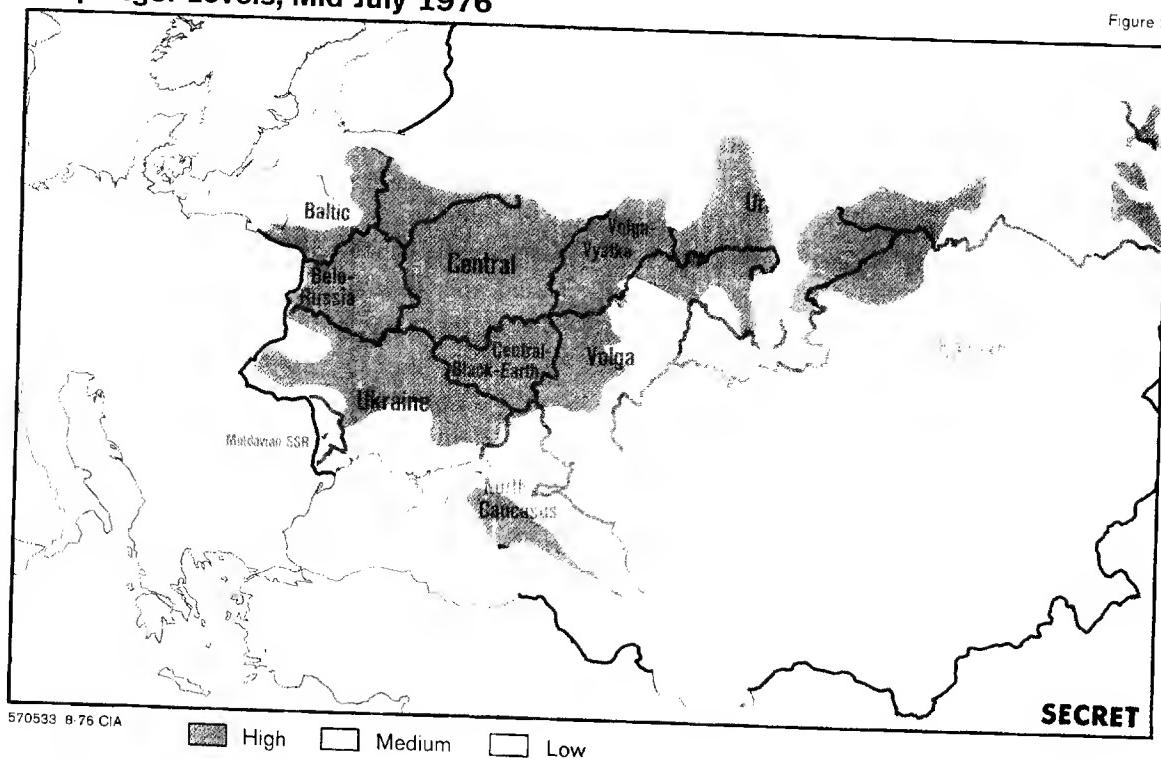
Crop Vigor Levels, Mid-July 1975

Figure 1



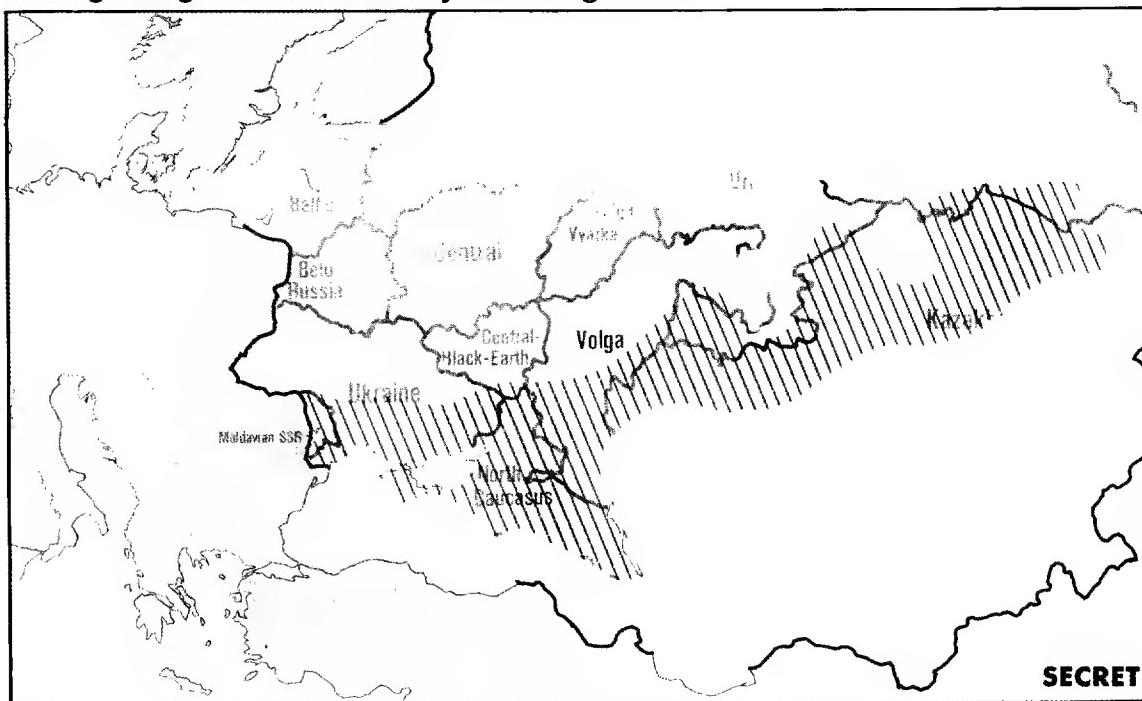
Crop Vigor Levels, Mid-July 1976

Figure 2



SECRET**Average Stage of Grain Maturity as of August 1st**

Figure 3



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- Swathing stage of ripeness for winter wheat
- ▨ Combine ripe stage for winter wheat and swathing stage of ripeness for spring wheat

TABLE 1**USSR: Harvest Progress¹**(Million hectares)²

	1971	1972	1973	1974	1975	1976
1 August	26 (23%)	40 (34%)	26 (21%)	18 (15%)	46 (37%)	18 (15%)
1 September	71 (62%)	70 (60%)	75 (61%)	76 (62%)	80 (64%)	
Total	114.6	116.1	122.7	123.2	125.3	125 (Est.)

¹ Cut and threshed, excluding corn.² Components and percentages are rounded.

Zhitomir have reportedly only threshed 18 and 3 percent respectively of their cut grains. Such reports are not unusual in light of this year's "wet harvest."

In the Central Statistical Administration report on 6-month Plan Fulfillment, the total sown grain acreage was officially announced as 131 million hectares (see Table 2). If such acreage is actually harvested it will be about 5 million hectares more than normal. Warm, dry weather during the next two months is of paramount importance to allow Soviet farmers to overcome current lag in harvesting. The onset of winter earlier than usual could lead to major losses in late September and early October if the pace of harvest does not progress more rapidly.

TABLE 2

USSR: Harvested Area

	Million Hectares	
	Average 1973-75	Estimated 1976
Total	127	129
Winter Grains	28.5	26 ¹
Spring Grains	98.5	103 ²

¹ Reflects an estimated 9.5 million hectares of winterkill plus an allowance of approximately 2 million hectares for use as green chop and spring pasture out of a total sown acreage of 37.5 million hectares.

² We estimate sown acreage at 105 million hectares. Past historical relationships between spring sown and final harvested acreage would suggest an abandonment of roughly 2 million hectares.

Total Grain Production

Soviet grain production of 195 million metric tons,* would be 55 million tons more than last year's disastrous harvest and some 14 million tons more than the average for 1971-75 (see Table 3). Production of this amount would be below the Soviet goal of approximately 205 million tons for 1976 and substantially less than the average annual production of 215-220 million tons called for in 1976-80 plan.

TABLE 3

USSR: Grain Production¹

	Million Metric Tons								
	Annual		Annual						
	Average	1966-70	1971	1972	1973	1974	1975	1971-75	1976
Total	167.6	181.2	168.2	222.5	195.6	139.9	181.5	195.0	
Winter grains ²	50.8	63.0	40.6	63.5	62.5	48.6	55.6	45.0	
Wheat	35.9	47.8	29.4	49.4	44.7	36.6	41.6	34.0	
Rye	12.8	12.8	9.6	10.8	15.2	9.0	11.5	11.0	
Spring grains	116.7	118.2	127.6	159.0	133.1	91.2	125.8	150.0	
Wheat	54.3	51.1	56.6	60.5	39.2	29.5	47.4	49.0	
Barley ³	28.3	32.3	35.1	51.7	51.6	32.8	40.7	56.0	
Other ⁴	34.1	34.8	35.9	46.8	42.3	28.9	37.7	45.0	

¹ Because of rounding, components may not add to the totals shown.

² In addition to winter wheat and rye, winter grains include winter barley.

³ Includes mixed grains.

⁴ Including corn for grains, oats, miscellaneous grains and pulses.

*The EAS crop monitoring system is based on a reduction of potential production as yield limiting events occur. Crop production potential is projected from short-range weather forecasts and under the assumption of subsequent *optimum* weather conditions. Since our last estimate of mid-June, the potential production capabilities for grain crops in the USSR has been reduced from 210 to 198 million tons. The current *potential* yield estimate may be lowered as the season progresses depending upon deviations from optimum weather conditions from now until harvest time.

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